



OVG MANCHESTER
ACCESS AND MAINTENANCE STRATEGY

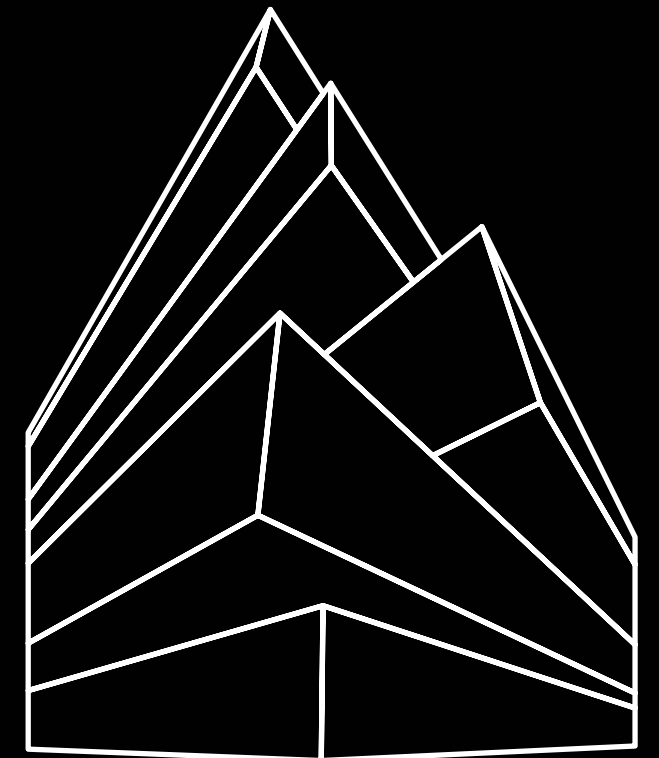
LANDSCAPE

BRA-POP-ZZ-ZZ-RP-L-7800

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OVG MANCHESTER

POPULOUS

1.1 Soft Landscape General Maintenance

OVG will maintain and manage the landscaping and public realm associated with the proposed development, including the wildflower landscaping adjacent to the canal towpath.

OVG is committed to improving the sightlines and attractiveness of the Canal route, which includes through cutting back shrubbery and vegetation. OVG actively support future maintenance in conjunction with relevant stakeholders.

Management of the towpath will continue to be undertaken by the CRT.

Planting Maintenance - General

In order to achieve a fully functional landscape planting maintenance needs to be carried out as follows:

- Maintain planting areas in a substantially weed free condition at all times by mechanical or suitable selective chemical methods.
- Apply selective, translocated herbicide control to any persistent weeds that are present, particularly any with deep persistent roots.
- Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows, taking care not to reduce depth or effect of mulch.
- Ensure that trees and shrubs are not damaged by the use of mowers, nylon filament rotary cutters and similar powered tools.
- Every quarter check condition of stakes, ties, guys and guards. Replace broken or missing items. Adjust if necessary to allow for growth and prevent rubbing of bark. Cut back any damaged bark.
- Spray crown of trees when in leaf during warm weather. Carry out in the evening.
- Wildflower meadow requires an annual maintenance programme to allow flourishing and reduce the vigour of the more rampant species. Mowing and weed control are required.



1.2 Green Screen Maintenance

The Green Screen has general maintenance requirements that apply to the full extent of the panels. However, the system used for them will depend on the height of the modules.

- When the green screen height is up to 3m, battery powered pole hedge cutters can be used from ground level.
- For heights over 3m, mobile scaffolding towers with wheels towed by vehicle or cherry pickers are required.

1. Installation

The Green screen needs to be installed during April-June to guarantee a good growth result. Planting will continue growing up to the end of September. (Lease time: 12 months)

2. Pruning

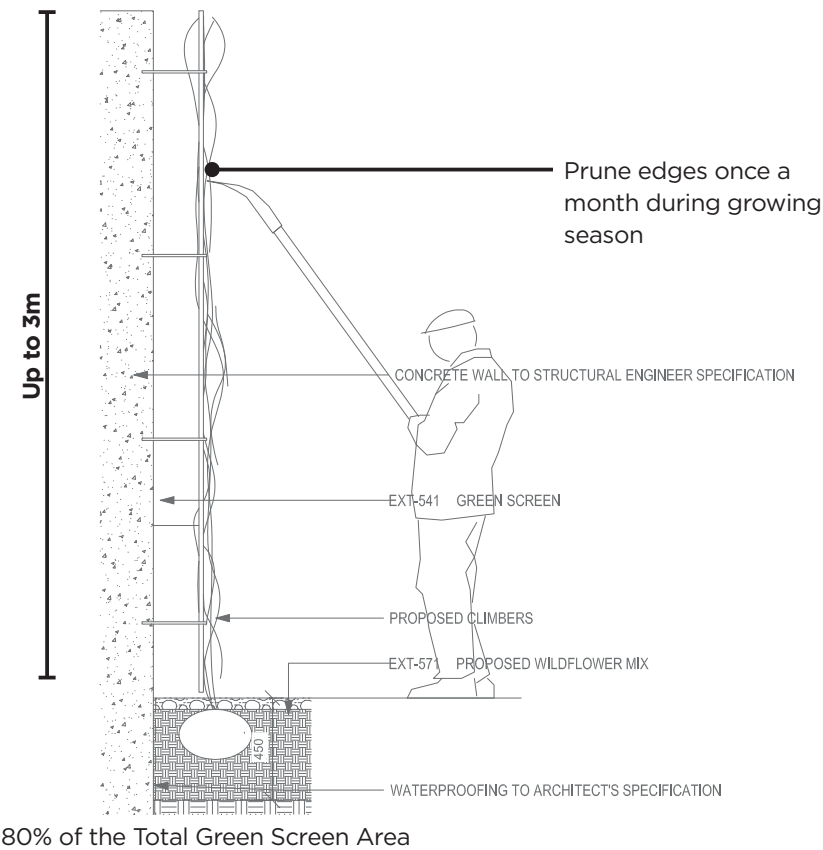
- Ordinary maintenance must be carried out monthly from April to October for the first year. After that, 3 times a year on April/May and September/October will be required.
- Prune new shoots during growing season (March-September) once a month if clean edges want to be maintained.

Note the following treatment guidelines:

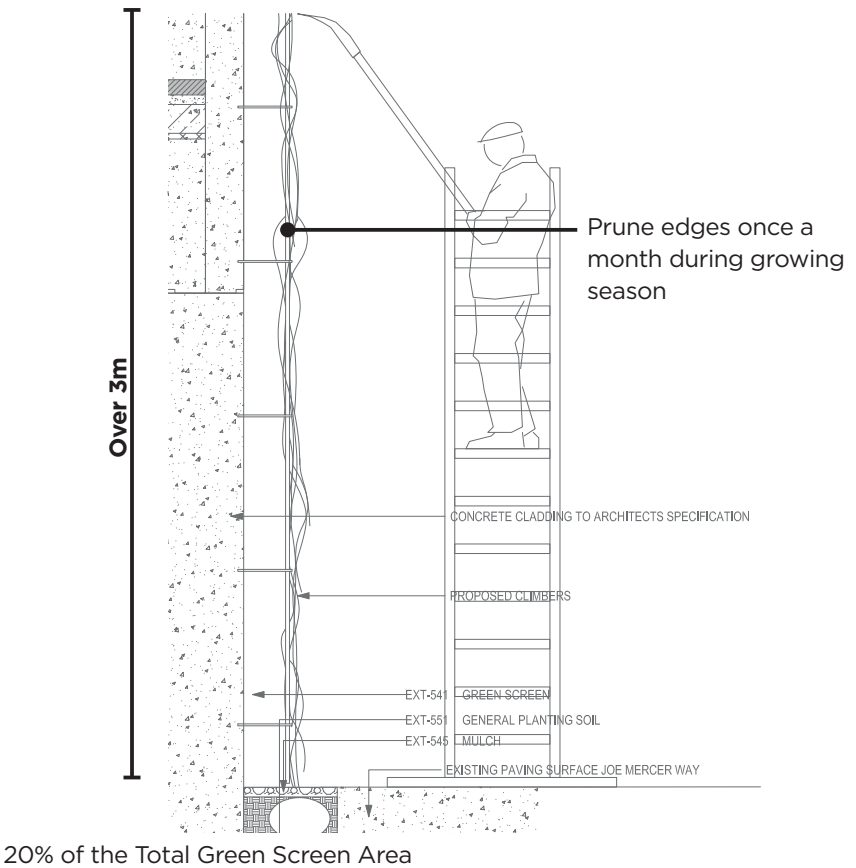
3. Irrigation & Fertilizer

- The Green Screen needs to irrigated, with hose pipe throughout March to October. This is especially important during the first year and in hot/dry periods. Screens require regular sufficient water (about 30 litres per screen). Screens should not be over watered or remain too wet for too long, as the roots could rot away. Regular watering is required, but the soil must be moist (not wet nor bone dry) in between watering.
- A slow release fertilizer which will last around 3-months is applied.

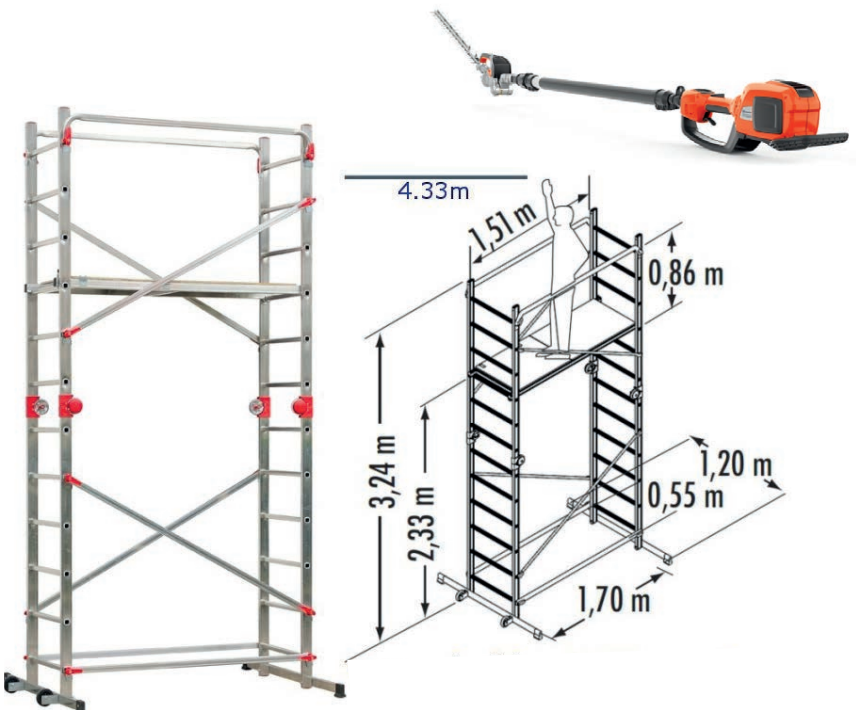
Green Screen up to 3m High



Green Screen over 3m High



Battery powered pole hedge cutter



Mobile Scaffolding Tower with Wheels towed by vehicles + Battery powered pole hedge cutter

1.3 Living Wall Maintenance

The Living has general maintenance requirements that apply to the full extent of the wall.

1. Installation

The Living wall needs to be installed during April-June to guarantee a good growth result. Planting will continue growing up to the end of September. (Lease time: 12 months)

2. Inspections

- Monthly visit for visual inspection of the wall and check the correct system operation, the moisture level of the growing medium (increase or decrease watering frequency) and any plant health treatments.
- Full check on plants and their growth every months, and Ensure a minimum of 95% wall coverage has live plants at all times. Replace plants if necessary after each inspection.
- Full check of the drainage system at the bottom of the wall every month to ensure the drainage gutter is free of dead leaves and debris.
- Full check on the irrigation system once in two months, and Top up the nutrients tank when needed
- Inspection of the structure twice a year.

3. Replacing damaged or dead plants

- Health of every individual plant must be arried out during every inspection visit. Each damaged or dead plant must be replaced during next available painting season (April - June) to ensure to maintain the coverage of the wall at a minimum of the 95% of the full extent of the wall.



1.4 Hard Landscape General Maintenance

OVG will maintain and manage the hardscaped areas on the podium and Ground Floor levels of the proposed development.

In order to achieve a fully functional hard landscape, maintenance of surface materials and street furniture needs to be carried out as follows:

- A suitable foliar acting or residual herbicide is to be applied to all hard surfacing areas, allowing recommended period to take effect before clearings. All litter, leaves and other debris are to be removed from all hard surfaces prior to application of herbicides.
- Apply the impregnator to the paving surface every 2 years to help prevent staining from contaminants and to make cleaning easier.
- Mud, silt and debris is to be removed from all surface gutters and channels.
- Drainage gullies are to have traps emptied and flushed clean as required to prevent obstructions.
- Any repairs to the hard surfacing are to be in accordance with the original paving specification.
- Stain removal to hard surfacing is to be in accordance with BS7370-2, table 4.
- Fences and enclosures are to be maintained and inspected monthly and appropriate repairs undertaken as necessary.
- Graffiti removal is to be carried out as soon as damage has been noticed. Method of removal will depend upon surface and is to be carried out in line with good practice.
- Regular monthly maintenance inspections are to be undertaken of surface treatments for litter, debris and leaf removal (or snow clearance and de-icing in winter months) and repair defects when necessary.
- Inspect street furniture each month and maintain or repair in accordance with manufacturers' recommendations, taking



1.5 Paving and Hard Surface Maintenance

1. Natural Stone, Concrete, Tarmac and Tactile

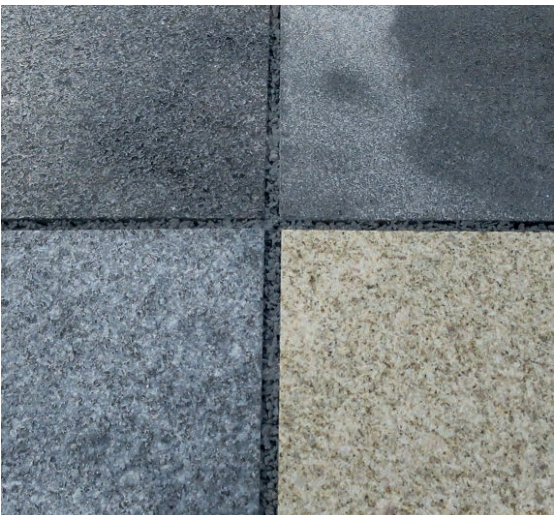
- The paving needs to be checked for regularity, trip hazards and damage.
- To remove general dirt and debris, high-pressure jets will be used once a week. Note the pressure setting must not cause any further distress.
- High-pressure jets are effective at removing moss and algae but the power must be used on a setting which does not cause any further distress. The power lance must not be directed down on to the paving.
- If applicable, weeds in paving joints are to be removed twice per month between March and October inclusive. Brush surface regularly to disturb emerging weeds and if jointing material is brought away after removing weed, replace it as soon as the surface is clean. Use weed killer if weeds persist following the manufacturer's advice and recommendations.
- Newly discarded chewing gum can be scraped off by using a mechanical scraper, but hardened gum can only be removed by both freezing the gum and chiselling it from the surface of the paving or a hot water/steam cleaner.
- Dried paint (Graffiti) must be scraped off as far as possible and then an appropriate paint remover applied. Paint manufacturers need to be consulted directly for specific recommendations. It is strongly advised to contact paving manufacturer before applying any product.
- Snow and ice deposits should be removed. De-icing salts can be applied to most of paving products during winter without risk of damage, however temporary discoloration caused by the salt material can be seen. Normal weathering should soon remove such discoloration. All de-icing products must be approved by the paving manufacturer before application.
- To remove wheel marks on the paving, WEISS Stain Protect Profi can be used to scrub the surface as it is a water based impregnator detergent.
- The Steinec jointing mortar of non-permeable paving requires the same ordinary cleaning as the paving material stated above however, the mortar is susceptible to acid based products. Extremely abrasive sweepers must not be used to avoid losing jointing material. pH neutral water based detergent are the best for cleaning the mortar and WEISS Grundreiniger is recommended to be diluted within the water.
- Permeable Steintec jointing mortar can be cleaned following the previous recommendations, but aggressive cleaning products must be avoided at all costs, in the worst case joints can be topped up. Seasonal cleaning with pH neutral water based detergent is recommended.
- To protect the concrete paving, a treatment using a water based impregnator must be carried out and replenished every 4-5 years. First, the stone is cleaned using a mild detergent (Grundreiniger from WEISS). This cleans and exposes the pores so the impregnator can penetrate the surface of the paving. It can also be used for regular cleaning. The maintenance company must be careful so the colour is not affected. The impregnator (Weiss Stain Protect PROFi) is then applied evenly using a sponge float so any excess is removed from the surface or mop for even coverage. Very little material is needed so the application with a sponge ensures that any excess is removed from the surface and only a small amount of impregnator penetrates the upper surface of the stone.
- Same cleaning processes must be applied to paving within recessed covers of floor boxes and manholes.
- Floor box must be cleaned inside to remove any possible debris and make sure the drainage outlet is always free to drain eventual rain water trapped in th floor box within paving subbase.



General cleaning with bristle brush



Stain cleaning with high-pressure jet



Steintec tuffflow permeable jointing mortar



Chewing gum removal by freezing and scraper



Graffiti cleaning with paint remover



Stone impregnator applied every 4-5 years to protect the stone

1.6 Timber Decking and Timber Furniture Maintenance

1. Timber Decking and Timber Tiered Seating and Furniture

- The use of high-pressure washing on timber decking is not recommended and the water jet of high-pressure washers must never be applied directly to the wood surface.
- To remove general dirt and debris, regular use of soft bristle brush and water is recommended twice a week. Rinsing with clean water after all surface deposits have been removed is advised.
- Mould and algae can be removed by brushing and washing with water containing ordinary cleaning agents. All products must be applied following the manufacturer's advice and recommendations.
- Heavily contaminated surfaces can be cleaned with alkaline detergents or detergents containing oxalic or hypochlorite. Cleaning agents to be approved by manufacturer before application.
- Rust or black stains as a result of using non-stainless fasteners can be removed with cleaning solutions containing oxalic acid.
- Hardened chewing gum can be removed by freezing the gum and using a scraper to detach it from the surface or utilising a steam cleaner. It is recommended to use the scraper because if the wood gets too hot it could be damaged.
- Dried paint can be treated with specific paint removers (for example graffiti removers) for wood. Paint manufacturers must be consulted directly for specific recommendations. It is strongly advised to contact paving manufacturer before applying any product. Paint removers are applied on the stain and left for the recommended period. After that, soft scrapers or wet sponges can be used to remove the loosened paint. If sealer has been applied before the graffiti stain, it needs to be reapplied when paint is

removed as the paint remover will detach the sealer as well.

- Snow and ice deposits should be removed. Slip resistant inserts have been specified for each panel of the timber decking to increase friction during freezing periods and avoid slippery surfaces. However, if there is a will to treat timber against frost, a water-repellent stain can be applied following manufacturer's recommendations by brushing it on to the wooden boards, preferably on a day with minimal sunlight. Product must be discussed with timber decking manufacturer before applying.
- To prevent vermin and pests, drainage near the decking area must be in good condition and clean. Spillages of food must be cleaned as soon as possible to avoid the attraction of wildlife. To prevent vermin such as rodents, the installation of close-mesh wire netting along the perimeter is recommended. Do not allow vegetation to grow below wood decking and avoid the keeping leaves on the area. If pest control products are used, they must be approved by timber manufacturer and pest control expert before applying.
- Oxalic acid needs to be carefully used to clean black stains and discolouration caused by incompatible metal parts such as zinc and iron. Other strong cleaning agents may discolour the timber producing a brighter appearance than the original at installation.
- Always rinse the surface with clean water after removing stains. Coating needs to be applied on all timber areas as per the manufacturer's recommendation: Spread Diotrol Golden Oil Exterior evenly on the surface (with the brush, wiper, cottontissue, or spray gun). Always work in the line of the wood grain. Let the product react for



Timber decking cleaning with bristle brush



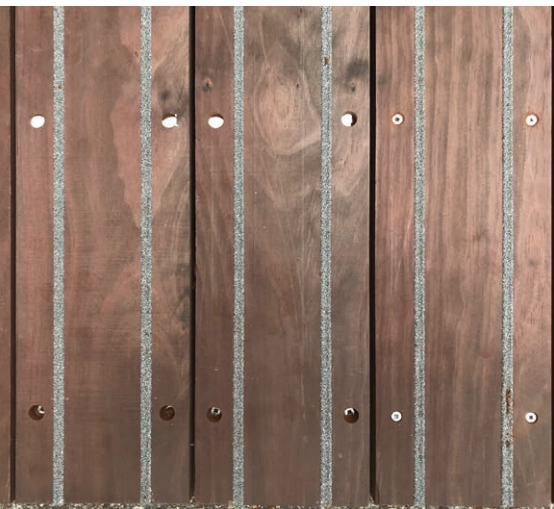
Removing Mould and algae



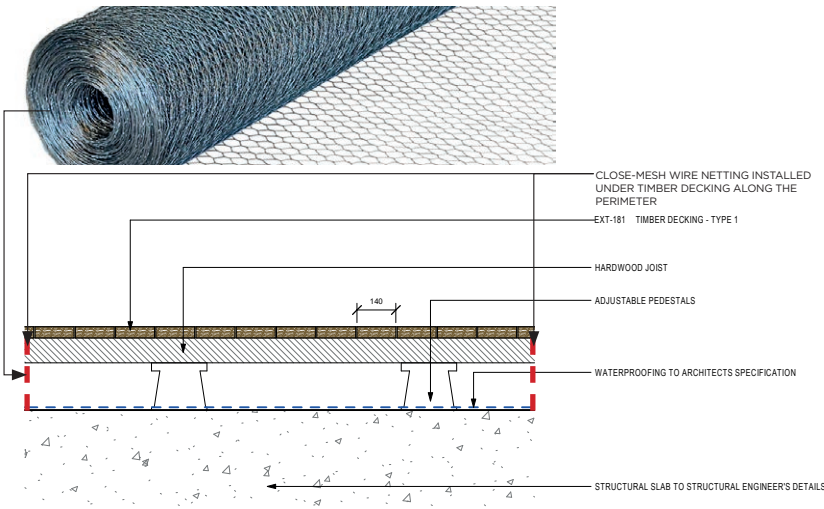
Chewing gum removal by freezing and scraper



Graffiti cleaning with paint remover



Slip resistant inserts against slippery surfaces



Close-mesh wire netting for vermin protection

1.7 Lighting Columns Maintenance

1. Lighting Columns and Head Lights maintenance

- All lighting requires some level of maintenance over time. The maintenance of street lighting equipment is a day to day activity that happens as a seamless process and in many instances, without the general public noticing. As a general rule, lighting equipment has always been designed to last for 25 years, after which it would be deemed that it should be replaced with new stock.
- Lanterns
Street lighting luminaires should be cleaned on a regular basis. Industry practice suggests cleaning on a three to four year basis for the lantern bowls and overall housing unit. Undertaking a regular clean helps to ensure the lighting unit has optimal performance and meet the British Standard lighting class which the lantern was originally installed to achieve.
- Lamps
There are generally two main strategies for the replacement of discharge lighting, as follows:
Burn to extinction, lamps are then replaced after total and complete failure
A lamp replacement programme, where street lighting units (lamps) in a particular area are replaced during a defined time period.
As a note, burning a lamp to total extinction extends to life of the lamp, however it is impossible to tell exactly how long a lamp will last between failure, and lighting units in a street are unlikely to fail all at the same time. The lumen output of discharge street lighting falls during its life and adopting a burn to extinction policy could cause a road lighting installation to fail to comply with the British Standards (BS 5489).
Group lamp replacement is generally the most cost effective way for street lighting maintenance and lamp replacement as it helps to spread costs and better utilise and plan the operations of maintenance street lighting staff. Testing

- Testing of street lighting stock should be carried out by experienced lighting maintenance staff to test, identify and investigate any inherent problems with the lighting installation. Any equipment used to test street lighting cabling, columns and the general network should be calibrated and suitable for the task involved.
- A street lighting column in the United Kingdom are generally made of steel and can be subject to sudden failure. As part of the general maintenance task of lighting equipment, regular structural inspection should be carried out. A visual inspection should be carried out on a yearly basis with a structural test carried out at regular intervals. There are numerous structural testing companies available that can undertake a selection of physical tests or non destructive type testing. Work should be programmed separately to other scheduled and cyclic maintenance regimes.



1.8 Drainage System Maintenance

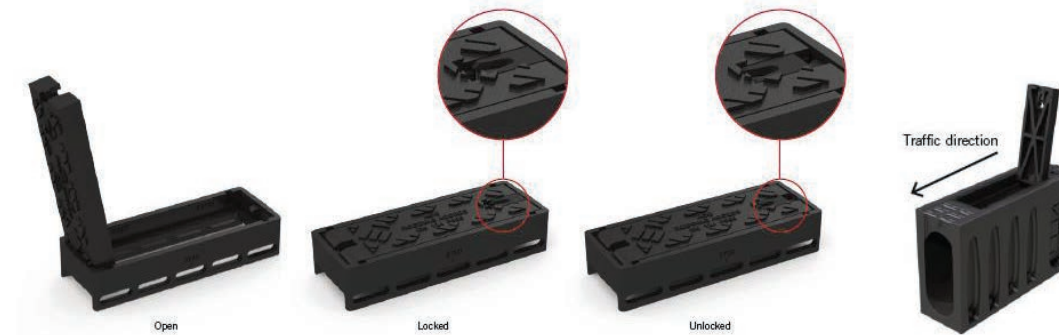
1. Drainage Channel

Drainage channels and gutters must be washed through and mud, silt and debris must be removed. Using a recycler combination jetting unit with hydraulic winch (pressure 80-150 bar) is recommended. Method below to be applied once a month:

- Drainage channel has access units with a hinged ductile iron lid for system maintenance.
- Remove the silt bucket, disposing of any contents and clean the bucket.
- Use a suction hose into the sump area to remove silt and detritus that the jetting hose will flush out.
- Position the jetting unit near the access unit facing the direction which is to be cleaned and make it travel the length of the channel while washing the channel. Place boards over the channel grates to prevent the escape of water. Increase the pressure when it reaches the end.
- Use a hydraulic winch to pull the jetting head backwards toward the sump. The suction hose previously inserted in the sump will remove the flushed out water and detritus.
- Replace the silt bucket, access and grate, then secure. Gratings must be cleaned with soap and warm water.

2, Gully

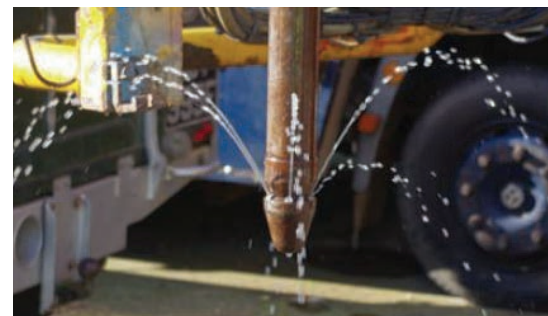
- Access drainage gully by removing bolts from ductile iron cover before lifting.
- Traps from gullies must be emptied and flushed clean and covers/gratings must be cleaned with soap and warm water twice a month.
- There are two methods for removing blockages from gullies. High-pressure jetting can be used to remove stubborn blockages such as grease, fat and oil. Specialist hose to suck the debris into a tank can be used for the rest of the items which have bigger volumes.



Drainage Channel Access Unit



Gully Access Cover



Use high-pressure jet to wash channel

1.9 Security Maintenance

1. Fence

- Cleaning to be carried out as necessary, using warm water and a very mild detergent. No abrasive materials to be used as they may damage the surface.
- Periodic checking of fixings must be carried out and tighten as necessary to ensure a fully functional fence.
- All inspections to be done by competent staff, including risk assessment prior to work.

2. Gates

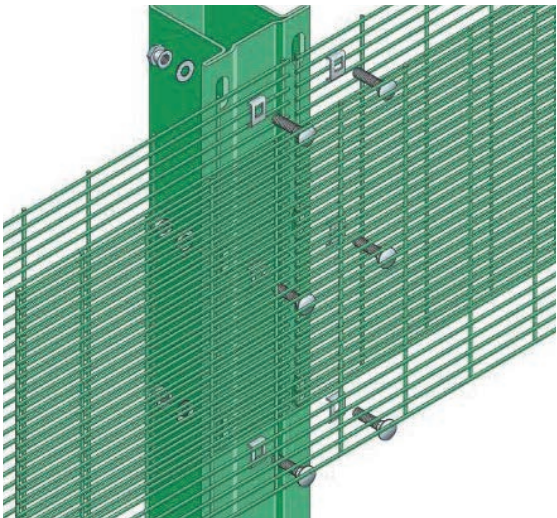
- Cleaning to be carried out as necessary, using warm water and a very mild detergent.
- All gates must be carefully checked and adjusted to ensure a minimum gap in the locking area. Lock to be adjusted using locking nuts provided next to leaf to create an even gap down the edge of the gate.
- Monthly checking of fixings and hinges must be carried out and tighten as necessary to ensure a fully functional gate. Hinges and bottom railings (sliding gates) must be lubricated on a regular basis to increase the life of the gate.
- Locks to be checked and tighten where required on monthly basis. All moving parts to be lubricated on a regular basis. Any spare parts that need to be replaced must be acquired from original manufacturer.
- All inspections to be done by competent staff, including risk assessment prior to work.

3. Bollards

- Retractable bollards must be inspected by a certified technician at least every 6 months. New installations must be serviced within 6 month of installation date in order to maintain the 12 month warranty.
- Scheduled servicing must include the inspection of bollard lid, flange, nut holders, trident plate, bollard, reflective strips, mechanism and outer housing

following manufacturer's advice. Several of these elements need to be removed and inspected to check condition, fasteners, nuts and replace if required. Technician must check if listed items are clean, corrosion free and/or faulty.

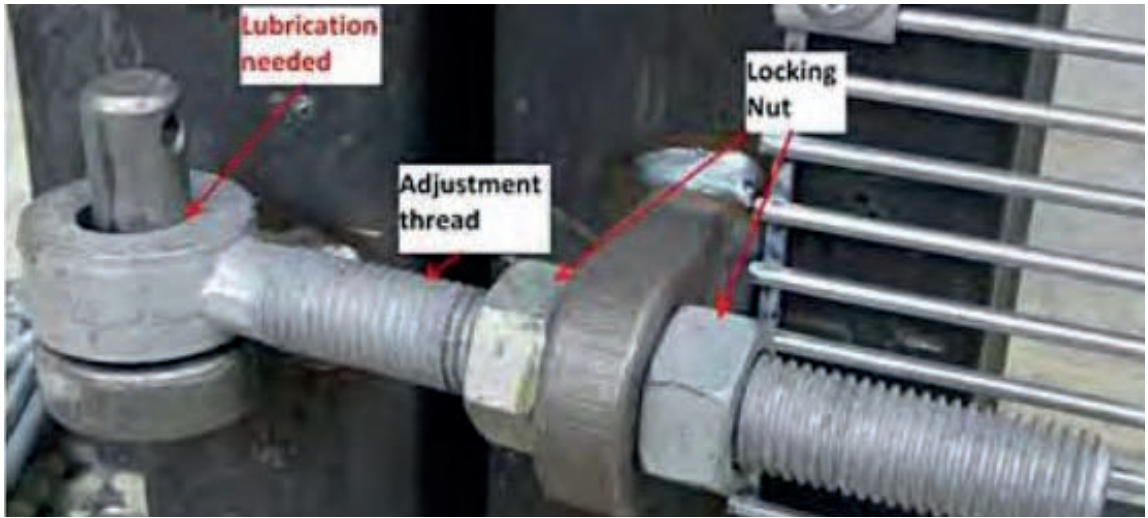
- Owners are advised by manufacturer to inspect the bollards on a weekly basis. A visual inspection must be carried out and it does not require technical competency however, it should be recorded on a weekly inspection checklist available from manufacturer (ATG).
- Weekly inspection must include checking bollard lid and its fasteners, flange and fasteners, bollard and bollard sleeve.
- Treatment for general cleaning: Fingerprints must be removed with soap and warm water and towel dry. Stains and scuffs will be removed with a dedicated cleaning product following its directions for use, avoid abrasive materials as they may damage the surface. Deep scratches and stubborn stains must be carefully brushed with an unused Scotchbrite Pad, limiting further surface finish damage. Wipe clean with a dry towel and protect with a dedicated polish or corrosion preventer following its directions for use.



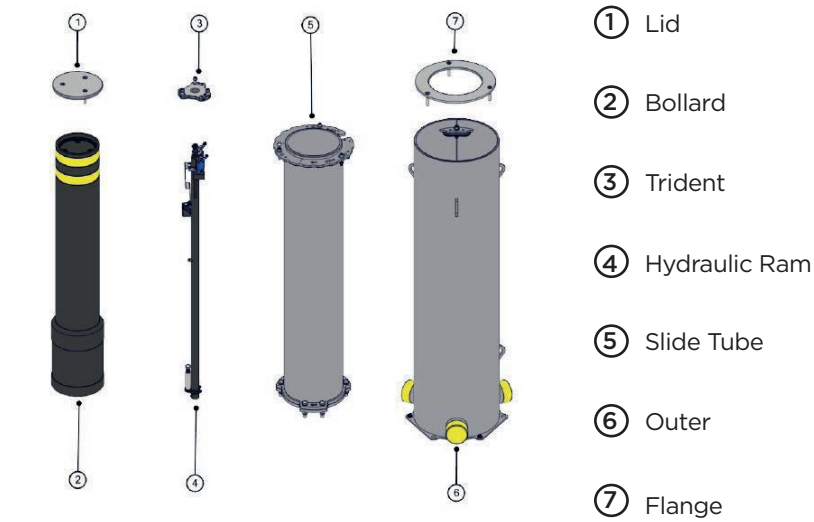
Fence Fixing



Sliding Gate



Gate Lock



Retractable bollard parts

1.10 Living wall Irrigation System Maintenance

1. General maintenance

Daily maintenance must be completed by onsite team and includes:

- Visually inspect the pump system, check that there are no leaks or damage to equipment.
 - Visually inspect pump control panel for any errors or faults.
 - Visually inspect external irrigation equipment for damage or leaks, this should form part of a daily site walk around.
 - Check irrigation control system for any station failures or errors.
6. Drain pressure vessel and any sundry plumbing in the plant room.
 7. Replace drain plugs to prevent entry of debris etc.
 8. Manually drain irrigation supply pipework to lowest point.
 9. Ensure the pump is isolated from the electric supply.
 10. Access central irrigation controller and perform system shutdown procedure.
 11. Ensure central irrigation controller is suitably protected from damp.
 12. Advise on of any remedial work required before the start of the next season.

Weekly maintenance must be completed by onsite team and includes:

- Check irrigation control system for correct operation by means of manual station operation.
- Check automatic control valves for correct operation and leaks.
- Check operation of pop-up sprinkler & spray heads.
- Check operation of drip tubing & drip emitters.
- Clean the inline filter on the irrigation pump discharge manifold.
- Check operation of Ultra Violet Sterilisation System.

Water sampling and testing for the presence of Legionella bacteria must be implemented as part of a regular sampling and testing program. This is to be incorporated into a site wide water testing regime by the owner.

2. Annual maintenance

The following procedures would be carried out during a winter shut down: (Note: Not all the procedures shall be applicable).

1. Isolate pump from electric supply.
2. Isolate pump from the irrigation supply pipework.
3. Release any residual pressure from the irrigation supply pipework.
4. Remove all drain plugs and drain pump/ discharge manifold.
5. Remove and/or drain suction manifold.